ACCEPTANCE TEST PROCEDURE

For

ANAMORPHIC ATTACHMENT #2 (BRASS)

For

High Power Stereoviewer

[redacted] STAT

Test performed by _____ DATE _____

_____ DATE _____

Anamorphic Attachment Accepted _____ DATE _____

[redacted] STAT

Revised 11/7/67

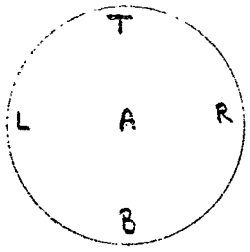
Acceptance Test Procedure for Anamorphic Attachment

The tests will be performed using the standard [ ] High Power Stereoviewer equipped with the [ ] 3X, 6X and 10X objectives, the [ ] 1.3X objective and the [ ] 6X and 10X eyepieces except as noted.

STAT STAT STAT STAT

1. Resolution

Resolution will be measured axially and at four places at the edge of the field as illustrated in the sketch of the field.



The resolution values of the HPSV without the Anamorphic Attachment will be considered as the reference values. The resolution read with the Anamorphic Attachment in place will be compared with the reference values. The resolution values of the HPSV with Anamorphic Attachment should be at least 90% of the resolution values of the HPSV. A high contrast, black bars on clear background, target will be used.

10X Eyepiece Objectives	Zoom Setting	HPSV Resolution at Field Position A	L	R	T	B	HPSV With Anamorphic Attachment A	L	R	T	B	Accept	Reject
1.3X	1X	70	20	20	30	30	80	20	20	30	30		
1.3X	2X	125	30	30	40	50	125	30	70	40	30		
3X	1X	165	54	54	27	54	165	54	54	54	82		
3X	2X	275	110	137	110	137	275	110	192	110	137		
6X	1X	343	165	192	137	247	275	165	192	165	275		

TARGET BLOCKS 10, 20, 30, 43, 50, 60, 70, 80, 90, 100, 125, 150, 175, 200.

BLOCKS ON RESOLUTION TARGET 1 2 3 4 5 6 7 8 9 10 11 12 13 14

22.5 54 82.5 110 137.5 165 192.5 220 247.5 275 343. 412.5 481 550

A L R -2- T B

6X	2X	420	180	300	180	300	420	240	300	240	300	_____ _____
(NOMINAL)	REFOCUS EDGE	180	540	480	300	420	180	540	540	600	540	
10X	FOCUS CENTER 1X	600	180	180	180	240	600	180	240	240	300	_____ _____
	REFOCUS EDGE EACH TARGET 1X	—	480	300	360	360	—	480	420	420	420	
10X	FOCUS CENTER 2X	600	—	—	—	—	600	240	180	240	300	_____ _____
	FOCUS CENTER REFOCUS AT EDGE 2X	900	540	600	600	480	900	600	600	600	540	

Comments: EDGE OF CIRCLE OF TARGET AT EDGE OF FIELD.

FOR 6X & 10X OBJ. TARGET BLOCKS 60, 120, 180, 240, 300, 360, 420, 480, 540, 600, 750, 900, 1050, 1200

6X Eyepiece Objectives	Zoom Setting	HPSV Resolution at Field Position A	L	R	T	B	HPSV With Anamorphic Attachement A	L	R	T	B	Accept	Reject
1.3X	1X	60	20	20	10	20	60	20	20	10	20	_____	_____
1.3X	2X	100	40	30	20	30	100	40	30	40	50	_____	_____
3X	1X	137	54	54	54	54	165	110	54	54	82	_____	—
3X	2X	247	165	137	110	137	247	165	137	110	165	_____	_____
6X	1X	275	110	165	110	192	275	165	137	110	192	_____	_____
6X	2X	412	343	343	343	343	412	343	343	275	343	_____	_____
10X	1X	420	240	240	240	300	420	300	240	240	300	_____	_____
10X	2X	750	540	420	360	420	600	540	420	420	480	_____	_____

Comments: FOCUS CENTER & EDGE

2. Field Size

A scale will be placed in the object plane and the field size will be measured. The Anamorphic Attachment shall not cause more than a 5% loss of field when compared with the standard HPSV.

10X Eyepiece Objectives	Zoom Setting	HPSV Field Size in mm	HPSV With Anamorphic Attachment Field Size in mm	Accept	Reject
1.3X	1X	13.3	13.3		
1.3X	2X	6.75	6.7		
3X	1X	6.5	6.4		
3X	2X	3.0	3.05		
6X	1X	3.25	3.2		
6X	2X	1.52	1.55		
10X	1X	1.9	1.89		
10X	2X	.9	.93		

Comments:

6X Eyepiece Objectives	Zoom Setting	HPSV Field Size in mm	HPSV With Anamorphic Attachment Field Size in mm	Accept	Reject
1.3X	1X	12.9	12.7		
1.3X	2X	6.55	6.5		
3X	1X	6.25	6.1		
3X	2X	3.04	2.94		
6X	1X	3.15	3.1		
6X	2X	1.52	1.5		
10X	1X	1.85	1.83		
10X	2X	.9	.9		

Comments:

3. Anamorphic Magnification

STAT STAT In this test a [ ] 10X wide field eyepiece will be used instead of the [ ] eyepiece. Its purpose is to accept a scale which will be used for measuring the lengths of perpendicular meridians. A suitable scale or grid will be used in the object plane. The ratio of the lengths of perpendicular meridians is a measure of the Anamorphic Magnification. The Anamorphic Magnification range shall be from 1.0 to 2.2X.

HPSV WITH ANAMORPHIC ATTACHMENT

	Anamorphic Scale Setting	Calculated Anamorphic Magnification (Ratio of Perpendicular Meridians)	Accept	Reject
3X obj.	1.0			
	1.2	$\frac{10}{8}$ = 1.25		
1X Zoom Setting	1.4	$\frac{10}{7}$ = 1.43		
	1.6	$\frac{10}{6.3}$ = 1.588		
	1.8	$\frac{10}{5.5}$ = 1.82+		
	2.0	$\frac{10}{4.9}$ = 2.04		
	2.2	4.5 ~ $\frac{10}{4.6}$ = 2.17 ~ 2.22		

Comments:

4. Eye Point Extension and Eye Relief 10X [ ] EYEPIECE. STAT

The difference in length between the standard HPSV eyepoint and the eyepoint of the HPSV with Anamorphic Attachment will be calculated. Both measurements will be made relative to a fixed point on the HPSV.

		Accept	Reject
Distance with Anamorphic Attachment	177 mm		
Distance with Standard HPSV	153 mm		
Difference - Eyepoint Extension	24 mm		

The eyepoint extension shall be no more than 3 inches.

The eye relief shall be measured from the exit pupil to the eyepiece.

STAT 10X [ ] EYEPIECE

	Standard HPSV	HPSV with Anamorphic Attachment	Accept	Reject
Eye Relief	16	15.5 mm		

STAT 6X [ ] EYEPIECE 21 mm

The Interpupillary separation shall be measured with and without the Anamorphic Attachments in place.

	Standard HPSV	HPSV with Anamorphic Attachment	Accept	Reject
IPD	54.5 - 73	53.5 - 71.5		

Comments:

5. Interchangeability

The time required to remove the Anamorphic Attachment shall be less than five minutes, without the use of special tools.

Time Required for Removal of the Anamorphic Attachment

	Accept	Reject
30 SECONDS ~~Minutes~~	____	____

Comments:

6. Anamorphic Axis Orientation

Verification will be made that the direction of anamorphic magnification shall be rotatable through 360°.

Accept	Reject
X	____

Comments:

7. Percent Transmission

The transmission of the Anamorphic Attachment shall be determined. A small diameter collimated beam of light will be transmitted through the Anamorphic Attachment equipped with the [ ] 10X wide field STAT compensating eyepiece. The light energy will be measured and will be compared to the light energy passing through the [ ] 10X eyepiece. STAT The ratio of the two values obtained will be a measure of the light

transmission of the Anamorphic Attachment.

		Light	Energy
		1X	2.2X
(1)	Anamorphic Attachment with 10X [ ] Eyepiece		
(2)	10X [ ] Eyepiece		

% Transmission = $\frac{(1)}{(2)}$ x 100 = 90%

STAT

8. PECHAN RUNOUT MEASURED IN EYEPIECE FOCAL PLANE

HPSV WITH ANAMORPHIC ATTACHMENT: 1.2mm

HPSV: 0.2mm

9. NO PERCEPTIBLE CHANGE WHEN ROTATING PLANE OF ANAMORPHOSA AT 1X SETTING

10. REMAINS IN FOCUS THROUGHOUT MICROSCOPE ZOOM RANGE & ANAMORPHIC ZOOM RANGE

ACCEPTANCE TEST PROCEDURE

For

ANAMORPHIC ATTACHMENT #1

For

High Power Stereoviewer

[redacted] STAT

Test performed by _____ DATE _____

_____ DATE _____

Anamorphic Attachment Accepted _____ DATE _____

[redacted] STAT

Revised 11/7/67

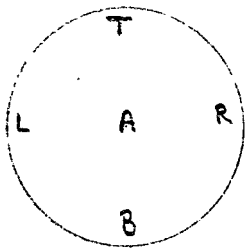
Acceptance Test Procedure for Anamorphic Attachment

The tests will be performed using the standard [ ] High Power Stereoviewer equipped with the [ ] 3X, 6X and 10X objectives, the [ ] 1.3X objective and the [ ] 6X and 10X eyepieces except as noted.

STAT STAT STAT STAT

1. Resolution

Resolution will be measured axially and at four places at the edge of the field as illustrated in the sketch of the field.



The resolution values of the HPSV without the Anamorphic Attachment will be considered as the reference values. The resolution read with the Anamorphic Attachment in place will be compared with the reference values. The resolution values of the HPSV with Anamorphic Attachment should be at least 90% of the resolution values of the HPSV. A high contrast, black bars on clear background, target will be used.

Objectives	10X Eyepiece Zoom Setting	HPSV Resolution at Field Position A	L	R	T	B	HPSV With Anamorphic Attachment A	L	R	T	B	Accept	Reject
1.3X	1X	—	—	—	—	—	90	20	10	10	20		
1.3X	2X	—	—	—	—	—	125	40	40	40	30		
3X	1X	—	—	—	—	—	192	110	54	54	82		
3X	2X	—	—	—	—	—	225	165	137	110	137		
6X	1X	—	—	—	—	—	360	180	180	180	180		

See data on #3

6X	2X	_	_	_	_	_	480	240	300	240	300	_____	_____
10X	1X	_	_	_	_	_	600	480	240	300	420	_____	_____
10X	2X	_	_	_	_	_	750	600	600	600	600	_____	_____

See data on #2

Comments:

6X Eyepiece Objectives	Zoom Setting	HPSV Resolution at Field Position A	L	R	T	B	HPSV With Anamorphic Attachement A	L	R	T	B	Accept	Reject
1.3X	1X	_	_	_	_	_	50	20	10	10	20	_____	_____
1.3X	2X	_	_	_	_	_	90	40	40	40	40	_____	_____
3X	1X	_	_	_	_	_	137	82	54	54	82	_____	_
3X	2X	_	_	_	_	_	247	165	137	110	137	_____	_____
6X	1X	_	_	_	_	_	225	165	165	165	192	_____	_____
6X	2X	_	_	_	_	_	412	275	343	247	343	_____	_____
10X	1X	_	_	_	_	_	480	360	300	240	300	_____	_____
10X	2X	_	_	_	_	_	750	600	540	600	600	_____	_____

See data on #2

Comments:

2. Field Size

A scale will be placed in the object plane and the field size will be measured. The Anamorphic Attachment shall not cause more than a 5% loss of field when compared with the standard HPSV.

10X Eyepiece Objectives	Zoom Setting	HPSV Field Size in mm	HPSV With Anamorphic Attachment Field Size in mm	Accept	Reject
1.3X	1X	____	13.3 13.5	____	____
1.3X	2X	____	6.7 6.36	____	____
3X	1X	____	6.35 6.1	____	____
3X	2X	____	3.09 2.95	____	____
6X	1X	____	3.2 3.05	____	____
6X	2X	____	1.55 1.48	____	____
10X	1X	____	1.87 1.78	____	____
10X	2X	____	.9 .89	____	____

Comments: See data on #2 — 10X wide E.P. — a different 10X wide E.P.

6X Eyepiece Objectives	Zoom Setting	HPSV Field Size in mm	HPSV With Anamorphic Attachment Field Size in mm	Accept	Reject
1.3X	1X	____	13.2 13.0	____	____
1.3X	2X	____	6.32 6.5	____	____
3X	1X	____	6.0 6.12	____	____
3X	2X	____	2.9 2.95	____	____
6X	1X	____	3.03 3.1	____	____
6X	2X	____	1.47 1.5	____	____
10X	1X	____	1.79 1.82	____	____
10X	2X	____	.88 .8	____	____

Comments: See data on #2 — second 6X E.P. — 6X E.P. used before on #2

3. Anamorphic Magnification

STAT In this test a [ ] 10X wide field eyepiece will be used instead of the

STAT [ ] eyepiece. Its purpose is to accept a scale which will be used for measuring the lengths of perpendicular meridians. A suitable scale or grid will be used in the object plane. The ratio of the lengths of perpendicular meridians is a measure of the Anamorphic Magnification. The Anamorphic Magnification range shall be from 1.0 to 2.2X.

HPSV WITH ANAMORPHIC ATTACHMENT

	Anamorphic Scale Setting	Calculated Anamorphic Magnification (Ratio of Perpendicular Meridians)	Accept	Reject
3X obj.	1.0			
	1.2	$\frac{10}{8.2} = 1.22$		
1X Zoom Setting	1.4	$\frac{10}{7.15} = 1.40$		
	1.6	$\frac{10}{6.3} = 1.587$		
	1.8	$\frac{10}{5.6} = 1.786$		
	2.0	$\frac{10}{5.0} = 2.00+$		
	2.2	$\frac{10}{4.5} = 2.22$		

Comments:

4. Eye Point Extension and Eye Relief

The difference in length between the standard HPSV eyepoint and the eyepoint of the HPSV with Anamorphic Attachment will be calculated. Both measurements will be made relative to a fixed point on the HPSV.

		Accept	Reject
Distance with Anamorphic Attachment	_____	_____	_____
Distance with Standard HPSV	_____	_____	_____
Difference - Eyepoint Extension	_____	_____	_____

The eyepoint extension shall be no more than 3 inches.

The eye relief shall be measured from the exit pupil to the eyepiece.

	Standard HPSV	HPSV with Anamorphic Attachment	Accept	Reject
Eye Relief	_____	_____	_____	_____

The Interpupillary separation shall be measured with and without the Anamorphic Attachments in place.

	Standard HPSV	HPSV with Anamorphic Attachment	Accept	Reject
IPD	_____	_____	_____	_____

Comments:

5. Interchangeability

The time required to remove the Anamorphic Attachment shall be less than five minutes, without the use of special tools.

Time Required for Removal of the Anamorphic Attachment

	Accept	Reject
_____ Minutes	_____	_____

Comments:

6. Anamorphic Axis Orientation

Verification will be made that the direction of anamorphic magnification shall be rotatable through 360^{o}.

Accept	Reject
X	_____

Comments:

7. Percent Transmission

The transmission of the Anamorphic Attachment shall be determined. A small diameter collimated beam of light will be transmitted through the Anamorphic Attachment equipped with the [ ] 10X wide field compensating eyepiece. The light energy will be measured and will be compared to the light energy passing through the [ ] 10X eyepiece. The ratio of the two values obtained will be a measure of the light

STAT

STAT

transmission of the Anamorphic Attachment.

		Light	Energy
		1X	2.2X
(1)	Anamorphic Attachment with 10X [ ] Eyepiece		
(2)	10X [ ] Eyepiece		

$$\% \text{ Transmission} = \frac{(1)}{(2)} \times 100 = \underline{90\%}$$

STAT

8. PECHAN RUN OUT MEASURED IN EYEPIECE FOCAL PLANE
HPSV WITH ANAMORPHIC ATTACHMENT — HPSV
0.4 mm — 0.2 mm

9. NO PERCEPTIBLE CHANGE WHEN ROTATING PLANE OF ANAMORPHISM AT 1X SETTING.

10. REMAINS IN FOCUS THROUGHOUT MICROSCOPE ZOOM RANGE & ANAMORPHIC ZOOM RANGE